

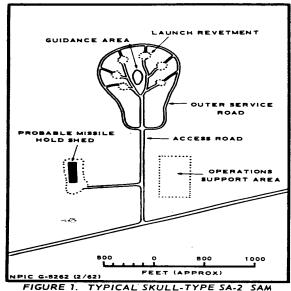
#### <del>- SECRET CHESS RUFF</del>

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#### SA-2 SAM SITES WITH UNUSUAL CONFIGURATIONS

KEYHOLE photography of 1961 has revealed two types of SA-2 SAM sites with configurations that differ from that of typical link, daisy, fan, and star sites. One is the skull type (Figure 1), of which five sites have been identified -- two near Khabarovsk, USSR; two near Spassk-Dal'niy, USSR; and one near Chorzow, Poland. The second type is the chevron, which has been identified only in the Leningrad (USSR) area. 1/ A forthcoming NPIC publication dealing with the SAM defenses around Leningrad will present details on the chevron configuration. However, a drawing of a typical chevron site is included in this report (Figure 2).

At the skull-type sites, the outer service road forms an elongated, skull-shaped pattern. The launch revetments are arranged in a semi-



TYPICAL SKULL-TYPE SA-2 SAM LAUNCH SITE.

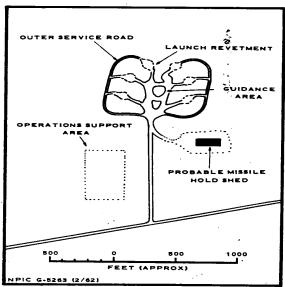


FIGURE 2. TYPICAL CHEVRON-TYPE SA-2 SAM LAUNCH SITE.

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circle around the guidance area at the center of the site. At four of the five sites the access road joins the outer service road at a right angle. The skull-shaped outer road pattern possibly reduces the reloading-cycle time. The configuration of these sites indicates a flow pattern in which the missile transporters would move from the access road into the firing area to unload the missiles, then move outward to the outer service road, and return to a storage point to reload. This arrangement would permit the vehicles to be outside the firing area after the missiles are unloaded at the launch revetments, thus eliminating interference with launch operations from interior vehicular traffic.

The five skull-type sites, each of which appears to be completed, are probably used for point defense of their respective areas. Details on the sites follow.

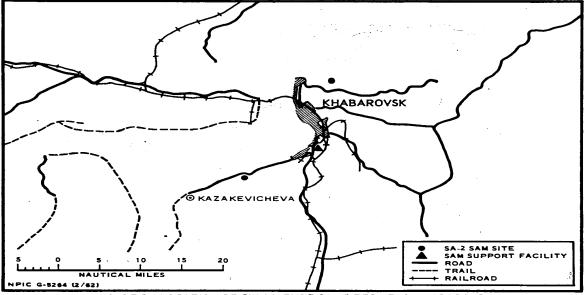


FIGURE 3. LOCATION OF SKULL-TYPE SAM SITES NEAR KHABAROVSK.

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FIGURE 4. SKULL-TYPE SAM SITE SOUTHWEST OF KHABAROVSK.

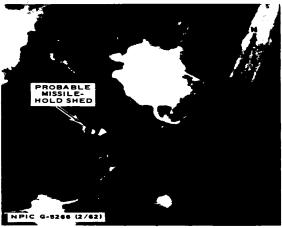


FIGURE 5. SKULL-TYPE SAM SITE NORTH-NORTH-EAST OF KHABAROVSK.

#### Sites Near Khabarovsk, USSR

Of the two skull-type SAM sites near Khabarovsk, one is 13 nm southwest of the city, at 48-19-20N 134-52-00E, in a wooded area on the south bank of the Amur River (Figure 3). The site is connected by an access road to the Khabarovsk-Kazakevicheva road. The skull-shaped outer service road and the inner service roads are visible (Figure 4). Two operations support buildings are located along the east side of the access road, and a probable missile-hold shed is on the west side. No hold revetments are apparent at the site itself.

The second site is 7.3 nm north-northeast of Khabarovsk, at 48-35- 30N 135-09-00E. Although part of the site is cloud covered, enough of the outer service road can be seen to permit the identification of the site as a skull-type SAM site (Figure 5). A probable missile-hold shed is southwest of the site. Cloud cover precludes further interpretation.

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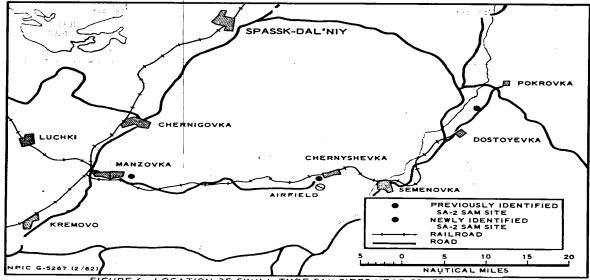


FIGURE 6. LOCATION OF SKULL-TYPE SAM SITES NEAR SPASSK-DAL'NIY.

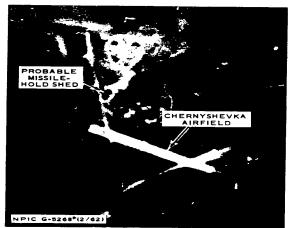


FIGURE 7. SKULL-TYPE SAM SITE SOUTH-SOUTH-EAST OF SPASSK-DAL'NIY.



FIGURE 8. SKULL-TYPE SAM SITE EAST-SOUTH-EAST OF SPASSK-DAL'NIY.

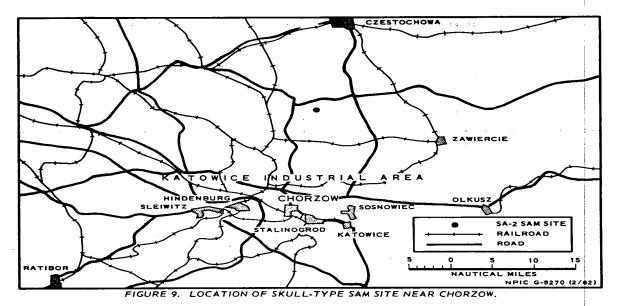
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#### Sites Near Spassk-Dal'niy, USSR

One of the skull-type SAM sites in the Spassk-Dal'niy area is 27 nm south-southeast of the city, at 44-11-10N 133-05-10E, adjacent to Chernyshevka Airfield (Figure 6). A probable missile-hold shed, south of the site, is connected to the site by a road (Figure 7). No hold revetments are apparent. Cloud cover and haze preclude further interpretation.

The second site is 32 nm east-southeast of Spassk-Dal'niy, at 44-21-30N 133-30-40E, in a wooded area at the end of an access road branching from the Dostoyevka-Pokrovka road. The six launch revetments and the guidance revetment are visible (Figure 8). Two ground scars along the east side of the access road indicate the possible construction of a missile-hold shed. No hold revetments are located at this site.



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Site Near Chorzow, Poland

This SAM site is at 50-33-40N 19-01-15E, in a heavily wooded area 17 nm north-northeast of Chorzow, a centrally located town in the Katowice industrial area (Figure 9). The outer service road forms a modified skull shape (Figure 10), possibly governed partially by the terrain. Three hold revetments are located along the outer service road. The six launch revetments and the guidance revetment are visible.

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